Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ZHIDAN LI TOLT

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Appeal No. 2002-1555
Application No. 09/511,572

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ON BRIEF

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Before GARRIS, KRATZ and DELMENDO, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's refusal to allow claims 26-42, which are all of the claims pending in this application.

BACKGROUND

Appellant's invention relates to a gas dispersion apparatus. An understanding of the invention can be derived from a reading of exemplary claim 26, which is reproduced below.

26. A gas dispersion apparatus for use in a reactor comprising:

at least one gas source;

at least two gas dispersion elements positioned proximate a filament array and a substrate, each said gas dispersion element forming an independent discharged gas zone directed at said substrate; and

each said gas dispersion element connected to said gas source by a gas feedline wherein gas flow can be independently controlled to each said gas dispersion element and gas zone formed thereby.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Fujiyama et al. (Fujiyama)	4,529,474	Jul. 16, 1985
Anthony et al. (Anthony)	4,970,986	Nov. 20, 1990
Fujii et al. (Fujii)	4,980,204	Dec. 25, 1990
Watabe	5,500,256	Mar. 19, 1996
Ni	6,200,387	Mar. 13, 2001 (filed Oct. 30, 1998)

Claims 26-29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii. Claims 30-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii, and further in view of Fujiyama. Claims 34-42 stand rejected under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii and further in view of Watabe.

We refer to the briefs and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by appellant and the examiner concerning the issues before us on this appeal.

OPINION

We have carefully reviewed the entire record, including all of the arguments and evidence advanced by both the examiner and the appellant in support of their respective positions. This review leads us to conclude that the examiner's rejections are not well founded. Accordingly, we reverse all of the aforementioned rejections. The reasons for our determination follow.

Anthony discloses a synthetic diamond deposition apparatus including two substantially parallel substrates (1, Fig. 2) on opposite sides of an array of filaments (2, Fig. 2). Anthony discloses that the spaced apart substrates permit gas flow therebetween. See column 2, lines 36-38 of Anthony. Anthony notes that the arrangement of the substrates and filaments allows for diffusion of gases passed into the reaction chamber between the substrates and gas contact with the filaments to promote nucleation and growth of synthetic diamond particles. See

column 4, lines 48-59 of Anthony. The examiner acknowledges that Anthony does not disclose gas dispersion elements, as here claimed. See the first full paragraph at page 5 of the answer. Accordingly, the examiner turns to Ni or Fujii.

According to the examiner (answer, page 5),

> it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the gas dispersion unit shown in Ni or Fujii et al. in the primary reference of Anthony et al. because these gas distribution structures provide for excellent controllability of the processes being conducted.

We do not agree with the examiner's obviousness position.

As explained by appellant at pages 19 and 20 of the second substitute brief, the examiner has not established why one of ordinary skill in the art would have been led to combine either of the disparate disclosures of Ni or Fujii with Anthony in a manner so as to arrive at the claimed subject matter. Ni discloses a method and system for chemically treating substrates with nebulized chemicals that is useful for semiconductor wafer and flat panel display wet processing. Fujii is concerned with apparatus for growing a compound semiconductor layer on a substrate with a high level of uniformity.

Neither Ni nor Fujii employs a filament array and two substrates as does Anthony. The examiner has not fairly

explained how the distribution system for supplying nebulized process chemicals for treating substrates disclosed by Ni or the gas supply vent pipe arrangement (110-114, Fig. 3) used for supplying gases for metal organic chemical vapor deposition (MOCVD) taught by Fujii would have led one of ordinary skill in the art to modify the distinctly different dual substrate filament synthetic diamond deposition system of Anthony in a manner so as to arrive at the claimed subject matter with a reasonable expectation of success in so doing.

While the examiner asserts that Fujii refers to a superior degree of uniformity in forming a compound layer in the MOCVD system disclosed therein, the examiner has not reasonably established that the gas introduction system of Fujii would suggest a modification of the dual substrate and filament driven synthetic diamond deposition system of Anthony that would result in the claimed structure. Ni is perhaps even more remote in that nebulized chemical supply system disclosed therein promotes a circular flow pattern in the process chamber (column 8, lines 53-57) whereas Anthony, as noted above, is concerned with deposition on parallel substrates with gas flow therebetween.

It is well settled that the mere fact that prior art may be modified to reflect features of the claimed invention does not

make the modification obvious unless the desirability of such modification is suggested by the prior art. Rejections based on § 103(a) must rest on a factual basis based on the teachings of the prior art. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). Our reviewing court has repeatedly cautioned against employing hindsight by using the appellant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. See, e.g., Grain Processing Corp. v. American Maize-Products Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

From our perspective, the examiner's proposed combination of Anthony with Ni or Fujii appears to be premised on impermissible hindsight reasoning. Nor has the examiner shown that the other references applied in the second and third stated rejections would make up for the deficiency in the first stated rejection of the examiner based on the teachings of Anthony together with Ni or Fujii. On the record of this appeal, it is our view that the examiner has not carried the burden of establishing a prima facie case of obviousness with respect to the subject matter defined by the appealed claims. Consequently, we reverse all of the stated rejections.

CONCLUSION

The decision of the examiner to reject claims 26-29 under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii; to reject claims 30-33 under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii, and further in view of Fujiyama; and to reject claims 34-42 under 35 U.S.C. § 103 as being unpatentable over Anthony in view of Ni or Fujii and further in view of Watabe is reversed.

REVERSED

BRADLEY R. GARRIS Administrative Patent Judge	)
PETER F. KRATZ Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
ROMULO H. DELMENDO Administrative Patent Judge	)

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APPEAL NO. - JUDGE KRATZ
APPLICATION NO.

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DECISION: **ED**

Prepared By:

DRAFT TYPED: 13 Mar 04

FINAL TYPED: